

REMARKS/ARGUMENTS

The Office Action mailed May 3, 2006, has been received and reviewed. Claims 1 through 72 are currently pending in the application. Claims 11, 19, 20, 29, 38 through 55, 62, 71, and 72 are withdrawn from consideration. Claims 1 through 10, 12 through 18, 21 through 28, 30 through 37, 56 through 61, and 63 through 70 stand rejected. Applicants have amended claims 1, 21 and 56. Reconsideration is respectfully requested.

Paragraph [0001] of the specification has been amended to reflect the issuance of U.S. Patent Application Serial No. 10/191,222 as a patent. No new matter has been added.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 5,057,451 to McCollum, in View of U.S. Patent No. 5,296,716 to Ovshinsky et al.

Claims 1 through 10, 12 through 18, 21 through 28, 30 through 37, 56 through 61, and 63 through 70 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over McCollum (U.S. Patent No. 5,057,451) in view of Ovshinsky et al. (U.S. Patent No. 5,296,716). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

McCollum discloses a method of forming an antifuse element. The antifuse element includes a substrate 10 having an N + diffusion region 12. A silicon dioxide layer 16 overlies the N + region. A thick field silicon dioxide region 24 overlies the silicon dioxide layer 16 and an upper electrode 28 is formed thereover. (McCollum, Figs. 1a-1c, col. 5, line 43 – col. 6, line 66). Ovshinsky discloses the use of chalcogenide materials in electronic memory applications.

By way of contrast with McCollum and Ovshinsky, claim 1 of the presently claimed invention recites an “integrated circuit device comprising: a first conductive layer including at least one protrusion; an insulative layer overlying the first conductive layer and exposing at least part of the at least one protrusion; and a programmable resistive material overlying directly above at least part of the insulative layer and in direct contact with the at least one protrusion of the first conductive layer, the programmable resistive material capable of switching between different resistive states.” Support for this amendment can be found throughout the as-filed specification and drawings, for example, FIGs. 10, 11, 12, 13, 14, 15.

Applicants respectfully submit that the combination of McCollum and Ovshinsky fails to teach or suggest every element of the presently claimed invention. For example, the combination fails to teach or suggest “a programmable resistive material overlying directly above at least part of the insulative layer and in direct contact with the at least one protrusion of the first conductive layer.” As the proposed combination fails to teach or suggest every element of claim 1 of the presently claimed invention, the prior art cannot render claim 1 obvious. Accordingly, claim 1 is allowable.

Claims 2-10 and 12-18 are each allowable as depending, either directly or indirectly, from allowable claim 1.

Independent claims 21 and 56 of the presently claimed invention are both allowable at least for the same reasons as claim 1. Namely, the proposed combination of references fails to teach or suggest “a layer of programmable resistive material in contact with the first portion of the first electrode and overlying directly above at least part of the insulative layer” or “a programmable resistive material in direct contact with the at least one raised portion of the first conductive layer and overlying directly above at least part of the insulative layer” as recited in claims 21 and 56 of the presently claimed invention.

As the proposed combination fails to teach or suggest every element of claims 21 and 56 of the presently claimed invention, the prior art cannot render claims 21 or 56 obvious. Accordingly, claims 21 and 56 are allowable.

Claims 22-28 and 30-37 are each allowable as depending, either directly or indirectly, from allowable claim 21.

Claims 57-61 and 63-70 are each allowable as depending, either directly or indirectly, from allowable claim 56.

ENTRY OF AMENDMENTS

The amendments to claims 1, 21 and 56 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application.

CONCLUSION

Claims 1-72, including those claims directed to a non-elected species and previously withdrawn from consideration, are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, the Examiner is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



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Date: July 26, 2006
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